

FROSTS.

Frosts are reported to have occurred in the various districts on the following dates:

New England.—2d, 4th to 20th, 27th to 30th, and on the summit of Mount Washington, New Hampshire, 1st to 9th, 12th to 17th, 26th to 30th.

Middle Atlantic states.—1st to 20th, 23d, 27th, 29th, 30th.

South Atlantic states.—1st, 5th, 9th to 14th, 17th, 18th, 21st, 30th.

Eastern Gulf states.—4th, 5th, 9th, 10th, 11th, 13th, 14th.

Western Gulf states.—4th, 10th, 12th, 13th.

Tennessee.—4th, 5th, 9th, 10th, 13th, 14th.

Ohio valley.—1st, 3d to 6th, 9th to 15th, 19th, 25th, 27th, 29th, 30th.

Lower lake region.—1st to 19th, 25th, 27th to 30th.

Upper lake region.—Daily, except 21st.

Extreme northwest.—1st to 5th, 7th to 13th, 15th, 18th, 23d, 24th, 27th to 30th.

Upper Mississippi valley.—1st to 4th, 7th to 13th, 23d, 24th, 27th, 28th, 29th.

Missouri valley.—1st to 5th, 7th to 15th, 17th, 18th, 19th, 21st, 23d to 26th, 28th.

Northern slope.—Daily, except 2d and 14th.

Middle slope.—2d, 3d, 4th, 6th to 10th, 12th, 13th, 15th, 16th, 20th, 22d, 24th to 30th.

Southern slope.—Fort Davis, Texas, 23d; Fort Elliott, Texas, 25th.

Southern plateau.—7th, 9th, 15th, 17th, 21st to 25th, 29th, 30th.

Middle plateau.—1st, 3d to 9th, 12th, 14th to 25th, 27th.

Northern plateau.—2d to 8th, 10th, 13th, 16th to 25th, 28th, 29th, 30th.

North Pacific coast region.—2d, 6th, 7th, 8th, 15th to 20th, 22d, 24th.

Middle Pacific coast region.—2d, 15th to 23d.

The following reports of damage to vegetation by frosts during April have been received:

East Portland, Oregon: strawberries were damaged to some extent by the frost on the 6th.

Augusta, Georgia: the frost of the 13th caused damage to young vegetation in the surrounding country.

Savannah, Georgia: a killing frost occurred in the lowlands in this vicinity on the 13th.

Knoxville, Tennessee: a heavy frost, injuring fruit and early vegetables, occurred on the 14th.

Tower House, Shasta county, California: the frosts of the 17th, 18th, and 19th were very damaging to fruit in the surrounding country.

Ashland, Oregon: the frost on the 18th caused slight damage to fruits; vegetation was much further advanced than usual at this season.

Red Bluff, California: the light frost on the 18th killed vegetables, vines, etc., on the foot hills.

Santa Rosa, Sonoma county, California: the frost on the 18th was the most severe for this season of the year that has occurred since 1875; all kinds of fruit were damaged.

Glen Ellen, Sonoma county, California: frost occurred in this vicinity on the morning of the 18th; it is feared that the grape crop was seriously injured.

Stockton, San Joaquin county, California: a heavy frost occurred in portions of this county on the 18th, causing damage to vineyards and gardens.

Saint Helena, Napa county, California: several frosts occurred in some parts of Napa valley on the 18th; in the lowlands the grapevines were damaged.

Tacoma, Pierce county, Washington Territory: frosts occurred on the 7th and 8th and from the 16th to 20th; these caused some damage to fruit and tender plants.

Boisé City, Idaho: on the 19th a heavy frost occurred; the temperature fell to 28°; it is reported that from fifty to seventy-five per cent. of the fruit blossoms were killed, and the damage is estimated at from \$25,000 to \$50,000. The

spring season was unusually advanced and consequently the damage to vegetation was very great.

Dayton, Washington Territory: on the 20th a heavy frost occurred and the temperature fell to 22° 3, being the lowest recorded since January; all kinds of early vegetation were destroyed; locust, cherry, and maple leaves were blackened and fell from the trees.

San Carlos, Arizona: the frost on the morning of the 21st caused a large amount of damage to crops in this vicinity.

ICE.

Ice formed in the southern parts of the country as follows:

California.—Blue Lake, 18th, ice formed about one quarter of an inch in thickness, causing much damage to the fruit.

Arizona.—Prescott, 21st, 24th.

Georgia.—Augusta, 14th.

North Carolina.—Charlotte, 11th, 14th, Lenoir, 9th, New River Inlet, 11th; Weldon, Raleigh and Statesville, 14th.

Tennessee.—Austin and Chattanooga, 14th.

PRECIPITATION.

[Expressed in inches and hundredths.]

The distribution of rainfall over the United States and Canada, for the month of April, 1885, as determined from reports from more than seven hundred stations, is exhibited on chart iii.

In the following table are shown, for each of the geographical districts, as deduced from Signal Service observations, the average April precipitation for a series of years; the average for April, 1885, and the departures from the normal.

Average precipitation for April, 1885.

Districts.	Average for April. Signal-Service ob- servations.		Comparison of April, 1885, with the av- erage for sev- eral years.
	For sev- eral years.	For 1885.	
	Inches.	Inches	Inches.
New England.....	3.60	3.13	-0.47
Middle Atlantic states.....	3.69	1.81	-1.88
South Atlantic states.....	4.04	2.16	-1.88
Florida peninsula.....	2.61	0.62	-1.99
Eastern Gulf states.....	5.87	4.32	-1.55
Western Gulf states.....	4.60	5.83	+1.23
Rio Grande valley.....	0.76	1.58	+0.82
Tennessee.....	5.82	2.57	-3.25
Ohio valley.....	3.50	3.73	+0.23
Lower lake region.....	2.36	2.44	+0.08
Upper lake region.....	2.02	1.98	-0.04
Extreme northwest.....	1.85	2.42	+0.57
Upper Mississippi valley.....	2.97	3.42	+0.45
Missouri valley.....	3.08	4.19	+1.11
Northern slope.....	1.61	1.45	-0.16
Middle slope.....	1.34	2.61	+1.27
Southern slope.....	1.37	1.99	+0.62
Southern plateau.....	0.48	0.41	-0.07
Middle plateau.....	1.74	2.24	+0.50
Northern plateau.....	1.86	0.15	-1.71
North Pacific coast region.....	3.58	0.88	-2.70
Middle Pacific coast region.....	3.00	1.49	-1.51
South Pacific coast region.....	0.98	1.09	+0.11
Mount Washington, N. H.....	4.28	2.66	-1.62
Pike's Peak, Colo.....	3.32	5.39	+2.07

In the districts on the Atlantic coast, the east Gulf states, Tennessee, southern Michigan, Wisconsin, and northeastern Minnesota, the precipitation has been below the average for April; it has also been below the average in southern Dakota, western Nebraska, Montana, in the western plateau districts, and on the Pacific coast, except in southern California, where there was a slight excess. The most marked deficiencies are shown in the Florida peninsula and north Pacific coast region, where there was only about one-fourth of the average precipitation, and in the middle and south Atlantic states, Tennessee, and the middle Pacific coast region, where it was about one-half of the average. In the Ohio and lower Missouri valleys, west Gulf states, middle and southern slopes, the extreme northwest, southern California, and the northern part of the lake region, the precipitation has been above the average, the excess being greatest in the Middle slope, Missouri valley and west Gulf states.

In the table of miscellaneous meteorological data are given the departures from the average at the various Signal Service stations.

Table of excessive, and greatest monthly precipitation—April, 1885.

Station.	Specially heavy.		Largest monthly.	Amount.	Station.	Specially heavy.		Largest monthly.	Amount.
	Date.	Amt.				Date.	Amt.		
<i>Alabama.</i>					<i>Kansas—Con'd.</i>				
Tuscaloosa.....	30	5.25	9.78		Leavenworth.....			6.63	
Mount Vernon B'k.....	7, 8	6.80	8.15		Wyandotte.....			6.00	
Bolling.....	7	3.00	7.12		Independence.....	21	3.28		
Do.....	30	2.13			<i>Louisiana.</i>				
Clintonville.....	7, 8	6.12	6.15		Point Pleasant.....	2	6.02	19.58	
Mobile.....	7, 8	3.45			Do.....	5, 6, 7	12.35		
Greenville.....	7, 8	2.90			Shreveport.....	22, 23	4.61	7.07	
Mount Willing.....	7, 8	2.00			<i>Maine.</i>				
Newton.....	8	3.00			Eastport.....	29	2.75		
Prattville.....	29, 30	2.00			<i>Missouri.</i>				
<i>Arkansas.</i>					Pleasant Hill.....			10.05	
Mount Ida.....	22	4.00	8.60		Independence.....			7.65	
Do.....	29, 30	2.60			Graham.....			7.64	
Fort Smith.....	22	4.30	7.63		Carrollville.....			7.46	
Little Rock.....			6.03		Carthage.....			7.38	
Lead Hill.....	22	3.82			Miami.....			7.25	
<i>California.</i>					Pierce City.....	21, 22	3.00	6.80	
Alcatraz Island.....	7, 8	2.35			Lamar.....	21, 22	3.22	6.64	
Presidio of S. F.....	6, 7, 8	3.00			Lamonte.....			6.25	
San Francisco.....	7, 8	3.55			Louisiana.....			6.00	
<i>Colorado.</i>					<i>Nebraska.</i>				
Pike's Peak.....	22, 23	3.50			De Witt.....			6.50	
Denver.....	22, 23	2.79			Omaha.....	20, 21	2.54	6.31	
<i>Dakota.</i>					York.....			6.25	
Webster.....	6	2.32	6.33		Marquette.....	20, 21	2.74		
Fort Pembina.....	22	2.00			Genoa.....	19, 20	2.60		
Fort A. Lincoln.....	22	3.14			<i>Nevada.</i>				
Bismarck.....	20, 21	2.43			Carson City.....	3	2.50		
Deadwood.....	20, 21	2.10			<i>New York.</i>				
Yankton.....	19, 20, 21	4.65			White Plains.....	28, 29	2.85?	6.63?	
<i>Florida.</i>					<i>Ohio.</i>				
Fort Barrancas.....	2, 3	4.32	8.90		Oberlin.....	24	3.00		
Do.....	7, 8	3.63			<i>Tennessee.</i>				
Pensacola.....	7, 8	2.69			Dyersburg.....	17	3.82	6.15	
<i>Illinois.</i>					Sweet Water.....	17	2.00		
Springfield.....			6.36		Ridgely.....	28	2.08		
Mattoon.....	15, 16	2.16	6.20		<i>Texas.</i>				
<i>Indiana.</i>					Honey Grove.....	5	2.30	8.60	
Marengo.....			8.30		Do.....	21	3.75		
<i>Iowa.</i>					Comfort.....	21, 22	4.08	8.34	
Cedar Rapids.....	30	2.05	7.82		Huntsville.....	5, 6	2.05	7.45	
<i>Kansas.</i>					Do.....	22, 23	2.92		
Elk Falls.....	14	4.00	11.50		Cleburne.....	5, 6	2.61	6.41	
Do.....	21	2.00			Do.....	21, 22	2.25		
Do.....	30	2.00			New Ulm.....	22, 23	3.06		
Sterling.....	19, 20	7.77	10.86		Palestine.....	22	2.09		
West Leavenworth.....	6, 7	2.50	8.90		Indianola.....	22, 23	2.57		
Fort Scott.....	21, 22	4.95	8.73		Do.....	24, 25	2.05		
Oswego.....	22	5.18	8.32		Galveston.....	23	2.64		
Maud.....	20, 21	3.28	7.50		Fort Elliott.....	20, 21	2.44		
Salina.....	20	2.02	7.03		<i>Virginia.</i>				
Westmoreland.....			7.01		Blacksburg.....	6, 7	2.40		

DEVIATIONS FROM AVERAGE PRECIPITATION.

The departures exhibited by reports from the regular Signal Service stations are shown in the table of average precipitation for the several geographical districts and also in the table of miscellaneous meteorological data. The following notes in connection with this subject are reported by voluntary observers:

Arkansas.—Lead Hill, Boone county: monthly precipitation, 5.38, is 0.62 in excess of the April average for the three preceding years.

Connecticut.—Hartford: monthly precipitation, 3.08, is 0.10 below the April average for the last thirteen years.

Dakota.—Webster, Day county: monthly precipitation, 6.33, is 3.61 above the April average for the two preceding years.

Georgia.—Milledgeville: monthly precipitation, 0.98, is about 4.00 below April average.

Forsyth, Monroe county: monthly precipitation, 1.65, is the least recorded in April during the last twelve years.

Illinois.—Sycamore, De Kalb county: monthly precipitation, 4.31, is 0.21 below the April average for the three preceding years.

Anna, Union county: monthly precipitation, 2.69, is 1.41 below the April average for the last ten years.

Mattoon, Coles county: monthly precipitation, 6.20, is 2.33 in excess of the April average.

Swanwick, Perry county: monthly precipitation, 2.91 is about the average for April for the last four years.

Indiana.—Logansport, Cass county: monthly precipitation,

3.74, is 0.16 above the April average for the last twenty-six years.

Vevay, Switzerland county: monthly precipitation, 4.69 is 1.16 in excess of the April average.

Wabash, Wabash county: monthly precipitation, 4.07, is 1.11 above the April average for the last nine years.

Kansas.—Yates Centre, Woodson county: monthly precipitation, 5.33, is 3.62 above the April average for the last five years.

Emporia, Lyon county: monthly precipitation, 5.70, is 3.24 above the April average for the last five years.

Wellington, Sumner county: monthly precipitation, 4.84, is 2.83 above the April average for the last seven years.

Independence, Montgomery county: monthly precipitation, 5.12, is 1.60 above the April average for the last thirteen years.

Maryland.—Fallston, Harford county: monthly precipitation, 1.60, is 1.57 below the April average for the last fourteen years, and is the smallest recorded in April during that period.

Massachusetts.—Somerset, Bristol county: monthly precipitation, 2.31, is 1.87 below the April average.

Worcester, Worcester county: monthly precipitation, 2.83, is slightly below the April average for a period of forty-seven years.

Missouri.—Saint Louis: monthly precipitation, 4.28, is 0.58 in excess of the April average for the last forty-eight years.

Nevada.—Carson City: monthly precipitation, 3.41, is 1.40 in excess of the April average.

New Jersey.—South Orange, Essex county: monthly precipitation, 1.30, is 2.96 below the April average for the last fifteen years.

New York.—Palermo, Oswego county: monthly precipitation, 1.00, is 1.10 below the April average for the last thirty-two years.

North Volney, Oswego county: monthly precipitation, 2.40, is 0.28 above the April average for the last thirteen years.

Ohio.—Wauseon, Fulton county: monthly precipitation, 3.71, is 1.34 above the April average for the last twelve years.

Vermont.—Woodstock, Windsor county: monthly precipitation, 1.98, is 0.45 below the April average for the last sixteen years.

Virginia.—Wytheville, Wythe county: monthly precipitation, 2.19, is 1.35 below the April normal for a period of twenty-one years.

Variety Mills, Nelson county: monthly precipitation, 1.39, is 1.48 below the April average for the last six years.

Washington Territory.—Bainbridge Island: monthly precipitation, 0.25, is the least recorded in April during the last seven years; the precipitation for April during that period has varied from 2.50 to 6.00.

West Virginia.—Helvetia, Randolph county: monthly precipitation, 5.04, is 1.16 below the April average for the last nine years.

SNOW.

The dates on which snow fell in the various states and territories are as follows:

Arizona.—Fort Apache, 20th; Prescott, 28th.

California.—Fort Bidwell, 16th, 17th, 18th; Fort Gaston, 16th.

The observer at Red Bluff reports a heavy snow-storm on the mountains west of station at 7 p. m. on the 12th, and a heavy snow-storm on the mountains east of station on the 18th.

The observer at Los Angeles reports that on the 29th the tops of the mountains east of station were covered with snow which fell during the preceding night. The peaks had been free from snow during the greater part of the month.

Colorado.—Pike's Peak, 4th, 5th, 6th, 12th to 16th, 18th, 22d to 24th, 26th, 30th; at the other places in the state on the 5th, 6th, 15th, 20th to 24th, 26th.

Connecticut.—4th, 11th, 28th, 29th.

Dakota.—1st, 2d, 6th to 11th, 13th, 15th, 17th to 22d, 25th to 28th, 30th.

Delaware.—13th.

District of Columbia.—11th.
Idaho.—15th.
Illinois.—9th, 11th to 14th.
Indiana.—12th, 13th, 14th.
Indian Territory.—Fort Reno, 21st, 24th, 29th.
Iowa.—4th, 8th, 9th, 11th, 12th, 16th.
Kansas.—24th.
Kentucky.—12th, 14th.
Maine.—2d, 4th to 7th, 12th, 13th, 26th, 27th.
Maryland.—10th to 13th, 15th.
Massachusetts.—2d, 11th to 14th, 26th, 29th.
Michigan.—1st, 2d, 3d, 5th, 8th to 15th, 24th, 27th, 28th.
Minnesota.—1st to 4th, 7th, 10th, 12th, 24th, 26th, 27th, 30th.
Missouri.—9th.
Montana.—10th, 16th to 23d, 25th to 28th.
Nebraska.—8th, 9th, 28th.
Nevada.—Winnemucca, 17th, 18th; Fort McDermitt, 17th; Carson City, 3d.
New Hampshire.—Mount Washington, 5th, 6th, 7th, 12th, 13th, 14th, 26th to 29th; at other places in the state from the 10th to 14th, 26th, 28th, 29th.
New Jersey.—9th, 11th, 29th.
New Mexico.—Santa Fe, 6th, 20th, 21st, 23d, 24th, 26th; Fort Union, 23d.
New York.—1st to 9th, 11th to 15th, 25th, 26th, 28th, 29th.
North Carolina.—Raleigh and Weldon, 10th, Asheville and Lenoir, 13th.
Ohio.—9th, 11th to 16th.
Oregon.—16th to 19th, 26th, 28th.
Pennsylvania.—3d, 4th, 9th to 15th, 28th, 29th.
Rhode Island.—Nyatt Point, 15th.
Tennessee.—Knoxville, 13th.
Utah.—Salt Lake City, 22d, 23d; Nephi, 21st.
Vermont.—3d to 6th, 12th, 13th, 14th, 26th, 28th, 29th.
Virginia.—9th to 13th.
West Virginia.—Wellsburg, 3d, 9th, 11th, 12th.
Wisconsin.—1st to 4th, 9th, 10th, 12th, 14th, 17th, 19th to 26th, 27th.
Wyoming.—7th, 8th, 20th to 23d, 27th, 28th, 29th.

The following notes relate to the severest snowstorms of the month.

Toronto, Ontario: a severe snowstorm prevailed throughout Ontario on the 3d; about eight inches of snow fell at Toronto.

Deadwood, Dakota: heavy snow began at 4.58 a. m. on the 21st, and continued all day; the snowfall blockaded all the roadways in this vicinity and caused delay of the mails. The snow blockade continued until the afternoon of the 23d.

Denver, Colorado, 22d: rain began at 3.53 p. m. and continued until 9 p. m., when it changed to snow which fell steadily until 5.25 a. m. on the 23d, there being a depth of twenty inches on the ground when the storm ended. The total depth was about twenty-three inches. This is considered the most severe storm that has occurred at Denver for a number of years. As the snow was very moist and heavy it resulted in much damage to roofs of buildings, trees, etc., which were broken down under its weight. During the morning of the 23d the streets of the city were impassable and business was almost entirely suspended. Railway trains were delayed several hours. The damage caused by this storm is estimated at \$60,000.

Georgetown, Colorado, 23d: the snow storm of the past few days has been of great severity. The fall of snow, about three feet, was the heaviest that has occurred since 1876. Travel on the railroads was suspended.

Idaho Springs, Colorado, 24th: the snow storm which began at about noon on the 22d and continued for twenty-four hours was unusually severe. Snow fell to a depth of thirty-two inches, which is the heaviest snowfall that has occurred since May 9th, 1867, when it fell to a depth of thirty-eight inches. Travel on the railroads and roadways was suspended for thirty-six hours.

MONTHLY SNOW-FALLS.

[Expressed in inches and tenths.]

Monthly snow-falls of two inches or more were reported from the various states and territories during the month as follows:

California.—Summit, 38; Cisco, 22; Boca, 15; Truckee, 14; Emigrant Gap, 12; Alta, 10.

Colorado.—Pike's Peak, 32.6; Denver, 31.

Connecticut.—North Colebrook, 3 to 4.

Dakota.—Deadwood, 28.8; Richardton, 24; Fort Totten, 8.4; Fort Buford, 5.1.

Illinois.—Sandwich, 2.8; Sycamore, 2.3; Chicago, 2.

Iowa.—Keokuk, 3.6; Des Moines, 2.6; Indianola, 2.5.

Kansas.—Sherlock, 4.

Maine.—Cornish, 8; Orono, 3.5; Eastport, 3; Belfast, 2.

Maryland.—Fallston, 2 to 3; Baltimore, 2.

Massachusetts.—Rowe, 5.

Michigan.—Hudson, 39.3; Moorestown, 23; Alpena, 20.3; Boyne, 16; Marquette, 14.3; Thornville, 14; Escanaba, 13.4; Swartz Creek, 9.6; Harrisville, 9.5; Ionia and Manistique, 8.8; Lausling, 8.5; Detroit, 8.1; Ann Arbor, 7.7; Mottville and Port Huron, 4; Traverse City and Northport, 3.

Minnesota.—Saint Vincent, 18.2; Minneapolis, 2.2.

Montana.—Fort Custer, 12; Fort Maginnis, 9.7; Helena, 9.1; Fort Shaw, 5.7; Fort Benton, 5.4; Fort Assinaboine, 2.6.

Nebraska.—Yutan, 2.5.

Nevada.—Battle Mountain, 6; Wells, 4.5; Otego, 3.5; Hal-leck, 3; Palisade, 2.2; Elko and Carson City, 2.

New Hampshire.—Mount Washington, 5; Antrim, 4.

New Mexico.—Santa Fé, 5.8.

New York.—Rochester, 19.5; Buffalo, 15.7; Humphrey, 15.5; Le Roy, 14.6; Penn Yan, 7; Oswego, 6.6; Cooperstown, Auburn, and Ithaca, 6; Palermo, 4.2; Albany, 3.1.

Ohio.—Garrettsville, 10.2; Hiram, 7; Ruggles, 5; North Lewisburg, 3; Toledo, 2.5; Sandusky, 2.

Pennsylvania.—Grampian Hills, 12; Dyberry, 9; Erie, 8.2; Blooming Grove, 6.5; Wellsboro, 4.6; Drifton, 4.2; Pittsburg, 4.1; Mahanoy Plane, 4; Chambersburg, 2.5; Troy, 2.2.

Utah.—Nephi, 6.8.

Vermont.—Stratford, 9.5; Dorset, 6.5; Lunenburg, 4; Newport, 3.4; Chelsea, 3.2; Burlington, 3; Woodstock, 2.5.

Virginia.—Blacksburg, 2.5; Dale Enterprise, 2.

West Virginia.—Helvetia, 10.5.

Wisconsin.—Wausau, 18.5; Franklin, 12; Embarras, 10; Neillsville, 8.2; Manitowoc, 3.2; Madison, 2.

Wyoming.—Cheyenne, 4.

DEPTH OF UNMELTED SNOW ON GROUND AT END OF THE MONTH.

[Expressed in inches and tenths.]

Colorado.—Pike's Peak, 14.

New Hampshire.—Mount Washington, 12.1.

New Mexico.—Santa Fé, none in valleys, 25 on mountains.

SLEET.

Arizona.—Prescott, 28th.

California.—Sacramento, 18th.

Colorado.—Pike's Peak, 1st, 2d, 3d, 8th, 14th, 15th, 19th to 23d, 28th, 29th, 30th.

Idaho.—Boisé City, 17th, 18th.

Illinois.—Chicago, 11th.

Indiana.—La Fayette and Indianapolis, 14th.

Iowa.—Dubuque, 7th; Cresco, 12th, 17th.

Kentucky.—Louisville, 14th.

Maryland.—Baltimore, 4th.

Michigan.—Mackinaw City, Ann Arbor, and Northport, 2d; Hudson, 1st.

Minnesota.—Saint Vincent, 3d.

Montana.—Fort Benton, 22d; Fort Maginnis, 10th, 14th.

New Hampshire.—Mount Washington, 6th.

New York.—Palermo, Humphrey, Buffalo, and Oswego, 3d; Ithaca, 4th; Mountainville, 2d; Albany, 4th, 12th.

Ohio.—Toledo, Sandusky, Garrettsville, and North Lewisberg, 3d; Tiffin, 2d; Cleveland, 23d.

Oregon.—Lakeview, 13th.

Pennsylvania.—Erie, 3d; Leetsdale, 12th; Wellsboro, 1st; Mahanoy Plane, 3d, 4th.

Vermont.—Burlington, 3d.

Virginia.—Bird's Nest, 1st; Cape Henry, 10th.

Wisconsin.—Wausan, 1st; Milwaukee and La Crosse, 14th, 17th.

HAIL.

Corsicana, Texas: a violent wind and hail-storm swept over this place on the evening of the 2d. Hail-stones of unusual size fell, breaking sky-lights and windows. Stock in the surrounding country suffered severely, many animals being killed.

Leavenworth, Kansas: a thunder-storm prevailed from 3.15 to 4 a. m., on the 2d; from 4 to 4.08 a heavy fall of hail occurred. On the 30th a very heavy fall of hail began at 12.30 a. m. and continued for a few minutes; in some parts of the city the hail stones fell to a depth of five inches. The storm approached suddenly from the northwest and the fall of hail was followed by very heavy rain which continued until 2.15 a. m.

Thorp's Spring, Hood county, Texas: a severe rain and hail-storm occurred at this place during the night of the 15-16th. The fall of rain and hail began at 11.15 p. m. and continued with great violence for twenty minutes. The storm came from the southwest; it was accompanied by continuous flashes of lightning and very loud thunder, which caused substantial buildings to shake.

Talladega, Talladega county, Alabama: a severe hail-storm occurred about four miles south of this place on the 17th. Hail fell for about twenty minutes, covering the ground in some places to unusual depths. The young corn was ruined and trees were stripped of their foliage.

Much damage was done at Mardisville, a village five miles southeast of Talladega.

The April report of the "Alabama Weather Service," under direction of Professor P. H. Mell, jr., contains the following account of a hail-storm which occurred at Roanoke, Randolph county, Alabama, on the 17th.

The storm occurred about 1.30 p. m., and was about three miles wide. The fall of rain was almost like a flood, with a strong wind, blowing down some fences and prostrating many forest trees. The storm came from the northwest, and it is thought that about three inches of hail fell, although the stones were not unusually large. The trees were stripped of their foliage and the fruit crop was nearly destroyed along the track of the storm. The glass in many windows was broken. At Ashland and Fredonia the storm was equally severe. Light hail fell in various parts of the county.

San Antonio, Texas: a violent hail-storm is reported to have occurred on the 18th at Pearsall, Trio county, about twenty-five miles southwest of this place. The hail-stones were about the size of marbles and covered the ground to a depth of several inches. A frame church was completely demolished, together with some smaller buildings. Gardens and crops were badly damaged.

Louisville, Kentucky: from 6.03 to 8.13 p. m. on the 17th, a thunder-storm occurred accompanied by hail of small size. Trees and shrubbery were stripped of young buds and sky-lights and windows were broken.

• **Clay Centre, Clay county, Kansas:** at 5.25 a. m., on the 29th, a thunder-shower, accompanied by a light fall of small hail, occurred at this place.

Reports from Wakefield, in the southeastern part of Clay county, Kansas, state that during the night of the 28-29th a very violent hail-storm occurred there. The storm came from the southwest and caused great damage in the vicinity of Wakefield. Some of the hail stones were five inches in circumference; trees were stripped of their foliage and small animals killed.

Hail is also reported to have fallen in the following states and territories:

Alabama.—Mount Vernon Barracks, 8th.

Arkansas.—Lead Hill, 15th.

Arizona.—Prescott and Wickenburg, 15th.

California.—Fort Bidwell, 13th, 16th; Sacramento, 7th; Oakland, 19th; Blue Lake, 9th, 16th, 18th; Tower House, 16th; Hydesville, 18th; College City, 26th; Cahuenga Valley, 27th.

Colorado.—Pueblo, 4th, 28th; Denver, 2d, 15th; Montrose, 4th, 6th, 14th, 15th, 21st, 22d.

Connecticut.—North Colebrook, 26th; Hartford, 2d, 29th.

Dakota.—Fort Pembina, 3d; Fort Totten, 10th, 11th; Fort Sisseton, 10th.

District of Columbia.—West Washington, 8th.

Georgia.—Quitman, 17th, five miles northeast of station.

Illinois.—Edgington, 16th; Bunker Hill, 30th; South Evans-ton, 11th, Mattoon, Swanwick, Wilton Centre and Charleston, 7th.

Indiana.—Laconia, Vevay, and Jeffersonville, 17th; Logansport, 3d, 11th, 25th; Terre Haute, 12th; Indianapolis, 12th, 17th.

Iowa.—Keokuk, 28th; Oscaloosa, 4th; Ottumwa, 16th.

Kansas.—Manhattan, 7th, 30th; Independence and Wellington, 14th; Wyandotte, 29th; Salina, 21st, 29th; Allison, 15th; Leavenworth, 1st; West Leavenworth, 30th; Maud, 1st, 13th, 14th; Sterling, 20th, 27th; Oswego, 26th.

Kentucky.—Frankfort, 8th, 17th; Richmond, 8th.

Louisiana.—Point Pleasant, 2d, 7th.

Maine.—Gardiner, 4th; Waterville and Portland, 29th.

Massachusetts.—Taunton, 2d, 13th; Worcester, Rowe and Boston, 26th.

Michigan.—Hudson, 3d; Boyne and Escanaba, 2d; Mottville, 11th; Moorestown, 21st.

Minnesota.—Saint Vincent, 24th.

Missouri.—Independence, 1st, 29th; Pierce City and Carthage, 15th; Conception, 20th; Saint Louis, 16th.

Nebraska.—De Soto and North Platte, 20th; Red Willow, 19th, 20th, 28th, 29th; Stockham, 27th; Omaha, 20th, 27th.

Nevada.—Fort McDermitt, 13th, 28th.

New Jersey.—Dover, 29th.

New Mexico.—Fort Union, 28th.

New York.—Plattsburg Barracks, 26th; Madison Barracks, Fort Columbus and Mountainville, 2d; Humphrey, 3d, 28th; Albany, 12th, 26th.

North Carolina.—Raleigh, 10th; Blackwell, 9th; Wash Woods, 14th.

Ohio.—College Hill, 12th, 14th; Jacksonborough, 3d, 12th; Garrettsville, 28th; Yellow Springs, 17th; Cincinnati, 14th, 17th; Columbus, 12th, 17th.

Oregon.—Fort Klamath, 2d, 13th, 18th; Albany, 15th, 16th, 17th; East Portland, 12th, 14th, 15th, 16th; Portland, 12th, 14th, 15th, 16th; Roseburg, 16th, 17th.

Pennsylvania.—Blooming Grove, 28th; Dyberry, 4th, 28th.

Tennessee.—Austin, 9th.

Texas.—Cleburne, 11th, 24th; New Ulm and Austin, 2d; Comfort, 7th, 17th; Fort Concho, 5th, 11th, 17th; Fort Davis, 5th.

Utah.—Nephi, 8th, 22d.

Virginia.—Bird's Nest, 10th; Dale Enterprise, 18th.

Washington Territory.—Tacoma and Pysht, 15th; Fort Canby, 14th, 16th, 17th; Fort Townsend, 15th.

Wisconsin.—Sussex, 1st; Manitowoc, 2d; Embarras, 14th, 27th.

Wyoming.—Fort Fred Steele, 14th; Fort Bridger, 19th, 21st, 22d, 27th.

PRECIPITATION FROM A CLOUDLESS SKY.

Lead Hill, Arkansas: at about 8 p. m. of the 10th a sprinkle of rain fell, lasting two minutes. The sky was clear, except a small cloud in the southwest, and the stars were plainly visible at the time.

Mount Washington, New Hampshire: from 12.25 to 12.35 p. m., on the 12th, very light snow fell when the sky was entirely cloudless.

WINDS.

The most frequent directions of the wind during April, 1885,